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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/524,810

08/10/2005

Mario Kroeninger

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EXAMINER

ALGAHAIM, HELAL A

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/524,810	<b>Applicant(s)</b> KROENINGER ET AL.	
	<b>Examiner</b> HELAL A. ALGAHAIM	<b>Art Unit</b> 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 February 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 7-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-26 is/are rejected.
- 7) ☒ Claim(s) 7 and 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 February 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/18/2005; 7/18/2006</u> .                                    | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Drawings*

1. The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81(c). No new matter may be introduced in the required drawing. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d).
  2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, **the features discussed in the claims, for example: claim 1, a float angle and a transverse vehicle velocity. Claim 2, a stable operating state, a breakaway state, and a skid state.** These features must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.
- Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet”

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pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims **7, 8, 19 and 20** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The terms floating angle, a breakaway state and center-of-mass velocity are not supported in the specification.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims **7-26** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claims **7 and 19** recite the term “**floating angle**”. Examiner not clear what's a floating angle. Is it the roll angle? or a different angle. applicant needs to clarify it.

6. Claims **8 and 20** recite the term “**a breakaway state**”. Examiner not clear what's a breakaway state. Applicant discloses that a breakaway state is skidding motion. However,

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applicant also discloses skid state. Examiner not sure if the breakaway state is the same as skid state or a different stat.

7. Claims **19** recite the term “**center-of-mass velocity**”. Examiner not clear what's a the center-of-mass velocity. applicant needs to clarify it.

8. Claims **7 and 19** recite the term “**sensor suite**”. Examiner not clear what's a the sensor suite. applicant needs to clarify it.

9. Claims **8 and 20** recite the term “**the breakaway state is characterized by a large change in the float angle, and the skid state is characterized by a value of the float angle that is greater than a predefined threshold value**”. Examiner not clear what's a the applicant means by a large change, how large the change is. Also, the skid state float angle is greater than a predefined threshold value, this can a large change, which makes it same as the breakaway state. applicant needs to define what exactly he means by the large change is and greaten than a predefined threshold value. Examiner can not distinguish the difference between the two floating angles.

10. Claim **7 and 19** recites the limitation “**sensor unit**” in the **second limitation of claims 7 and 19**. There is insufficient antecedent basis for this limitation in the claim.

11. The term “substantially” in claims **8 and 20** is a relative term which renders the claim indefinite. The term “substantially” is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. **In this case, Examiner not clear if the float angle value is constant, has some variation or a small.**

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***Claim Rejections - 35 USC § 101***

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims **7 and 19** are rejected under 35 U.S.C. 101 because claims [7 and 19] as currently written appear to be drawn to process steps which fail to provide a tangible result.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. As best understood by the Examiner, claims **7-26** are rejected under 35 U.S.C. 102(b) as being anticipated by **Tobaru et al (Patent Number: 6438463)**.

**Regarding claim 7:** An apparatus for detecting a vehicle rollover, comprising: a sensor suite for sensing vehicle dynamics data and rollover data; and a processor connected to the sensor unit, wherein the processor categorizes an operating state of the vehicle into one of a plurality of successive phases, and wherein the processor determines, for each phase, a float angle and a transverse vehicle velocity from the vehicle dynamics data and the rollover data, and wherein the vehicle rollover is detected based on the float angle and the transverse vehicle velocity (**see at least fig. 2, fig. 3 and fig. 4**).

8. The apparatus as recited in claim 7, wherein the chronologically successive phases include a stable operating state, a breakaway state, and a skid state, wherein the stable operating state is characterized by a substantially constant value of the float angle, the breakaway state is characterized by a large change in the float angle, and the skid state is characterized by a value of the float angle that is greater than a predefined threshold value (**see at least fig. 2, fig. 3 and col. 7, lines 1-16**).

9. The apparatus as recited in claim 7, wherein the vehicle dynamics data includes at least one of a longitudinal vehicle velocity, a yaw rate and a transverse vehicle acceleration (**see at least fig. 4**).

10. The apparatus as recited in claim 8, wherein the vehicle dynamics data includes at least one of a longitudinal vehicle velocity, a yaw rate and a transverse vehicle acceleration (**see at least fig. 4**).

11. The apparatus as recited in claim 9, wherein the sensor suite additionally detects and outputs at least one of a wheel rotational speed, a longitudinal vehicle acceleration, a steering angle, and an estimate of the float angle (**see at least fig. 11**).

12. The apparatus as recited in claim 10, wherein the sensor suite additionally detects and outputs at least one of a wheel rotational speed, a longitudinal vehicle acceleration, a steering

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angle, and an estimate of the float angle (**see at least fig. 11**).

13. The apparatus as recited in claim 7, wherein the apparatus is connected to a restraint system that is activated by the processor based on the detection of the rollover (**see at least col.18, lines 18-31**).

14. The apparatus as recited in claim 8, wherein the apparatus is connected to a restraint system that is activated by the processor based on the detection of the rollover (**see at least col.18, lines 18-31**).

15. The apparatus as recited in claim 9, wherein the apparatus is connected to a restraint system that is activated by the processor based on the detection of the rollover (**see at least fig. 2, fig. 3 and fig. 4**).

16. The apparatus as recited in claim 10, wherein the apparatus is connected to a restraint system that is activated by the processor based on the detection of the rollover (**see at least fig. 2, fig. 3 and fig. 4**).

17. The apparatus as recited in claim 11, wherein the apparatus is connected to a restraint system that is activated by the processor based on the detection of the rollover (**see at least fig. 2, fig. 3 and fig. 4**).



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18. The apparatus as recited in claim 12, wherein the apparatus is connected to a restraint system that is activated by the processor based on the detection of the rollover (**see at least col.18, lines 18-31**).

19. An apparatus for detecting a vehicle rollover, comprising: a sensor suite for sensing vehicle dynamics data and rollover data; and a processor connected to the sensor unit, wherein the processor categorizes an operating state of the vehicle into one of a plurality of successive phases, and wherein the processor determines, for each phase, a float angle and a vehicle center-of-mass velocity from the vehicle dynamics data and the rollover data, and wherein the vehicle rollover is detected based on the float angle and the vehicle center-of-mass velocity (**see at least fig. 2, fig. 3, fig. 4 and col. 18, lines 18-31**).

**Regarding claims 20-26: They're rejected using the same prior arts and same rationales as claims 8-18.**

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HELAL A. ALGAHAIM whose telephone number is (571)270-5227. The examiner can normally be reached on Monday - Friday from 7:30 AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack W. Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. A. A./  
Examiner, Art Unit 3663

/Jack W. Keith/  
Supervisory Patent Examiner, Art Unit 3663